Inventors: Warren et al.
Serial Number 09/840,235

PATENT APPLICATION
Navy Case 82413

Remarks/Arguments

Claims 24-40 are currently in the application. Claims 24, 27, 28, 33, 36 and 37 have been amended. Support for the amendment to the claims is in the specification at pp. 5-7. Applicants will now address the rejections in the Office Action, as follows.

The rejection of Claims 24-28, 33-37, and 40 under 35 U.S.C. 102(b).

The Examiner has rejected claims 24-28, 33-37, and 40 as anticipated by U.S. Pat. No. 5,555,324 by Waxman et al. Applicants hereby traverse the rejection as to the present claims. Claim 24 as amended now recites that the one or more imaging sensors have at least three image-acquiring sensor areas, that each sensor area is sensitive to a different spectral band than at least one other sensor area, and that these each generate an image output representative of an acquired image in the spectral band to which the sensor area is sensitive. The color fusion algorithm then combines the image outputs into a single image.

Waxman employs just two sensors (cameras 310 and 312) and takes the two signals to produce three processed image signals. A first equation is applied to one signal while a second equation is applied to a second signal to generate contrast-enhanced image signals. The contrast-enhanced image signals are then applied to a processor that applies another equation to generate

a third processed opponent color image signal. The three signals are input to a processor that transforms red, green and blue color vectors into three output vectors that describe exactly the same color (Waxman at col. 15, lines 5-21).

In contrast the present invention takes the outputs of three different sensor areas of sensors sensitive to different wavelengths and via the color fusion algorithm combines the image outputs into a single image. This is clearly different than the processing and the output image in Waxman.

Claim 27 now recites that simple color fusion requires that each of the three sensor area image outputs is separately assigned to a different display color based on wavelength; claim 36 has also been so amended. As pointed out, Waxman uses just two sensors generating two outputs. The Examiner states that Waxman in Figure 6 illustrates an algorithm assigning colors to ouputs based on wavelengths, but Figure 6 nowhere appears to show the simple color fusion (SCF) of the invention.

Claim 28 now recites that in principle component color fusion the three sensor area outputs are fused into one image; claim 37 has also been so amended. The Examiner asserts that Waxman discloses the PCCF algorithm at column 3, lines 28-43. As noted above, Waxman employs just two sensors to ultimately generate three processed outputs, not three sensor area outputs as in the present invention. Waxman therefore does not disclose the PCCF color fusion algorithm.

Applicants respectfully request that the rejection on these grounds now be withdrawn.

The rejection of claim 29 under 35 U.S.C. 103.

The Examiner has rejected claim 29 over Waxman in view of U.S. Pat. No. 4,533,938 by Hurst. The rejection is respectfully traversed.

The arguments made above in regard to the rejection under 35 U.S.C. 102 over Waxman area reiterated as to the present rejection. Hurst in combination with Waxman does not teach the invention as presently claimed in claim 29.

The rejection of claims 30-32, 38 and 39 under 35 U.S.C. 103.

The Examiner has rejected claims 30-32, 38 and 39 over Waxman in view of U.S. Pat. No. 6,597,807 by Watkins et al. The rejection is respectfully traversed.

The arguments made above in regard to the rejection under 35 U.S.C. 102 over Waxman area reiterated as to the present rejection.

The Examiner also asserts that Watkins suggests using three sensors as in the present invention since Watkins utilizes three sets of stereo senor pairs. These are not the same as those of the invention. The present claims require that the outputs of three different sensor areas of sensors sensitive to different wavelengths be combined via the color fusion algorithm into a single image. Watkins merely utilizes different spectral views and the representative signals but does not proceed to process these nor to color fuse these into a single image unlike the invention.

Inventors: Warren et al.
Serial Number 09/840,235

PATENT APPLICATION
Navy Case 82413

The base claims and the dependent claims are allowable for the reasons set forth above, and the dependent claims also for the additional limitations recited therein. Applicants respectfully submit that the claims presently submitted are allowable for the reasons stated above and request that a timely Notice of Allowance be issued in the case. The Examiner is invited to contact Applicants' attorney at the number indicated below should further discussion help advance the case to issuance.

Kindly charge any additional fee, or credit overpayments, to Deposit Account No. 50-0281.

Respectfully submitted,

L. George Legg
Reg. No. 34,208
Attorney for Applicants

Date: June 27, 2005
Telephone: 202-404-1559